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Feature Article - Updating the Experimental Composite Leading Indicator of the Australian Business Cycle: June Quarter 2001

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BACKGROUND

The ABS Experimental Composite Leading Indicator (XCLI) is a single time series designed to provide early signals of turning points in the Australian business cycle. It does not predict the level of GDP or signal recessions or recoveries. Past performance of the XCLI shows it led turning points in the business cycle by between one and six quarters, with the average being around two quarters.

The XCLI has been developed to supplement rather than to compete with existing forms of economic analysis and forecasting. It is published each quarter in Australian Economic Indicators (in the March, June, September and December issues).

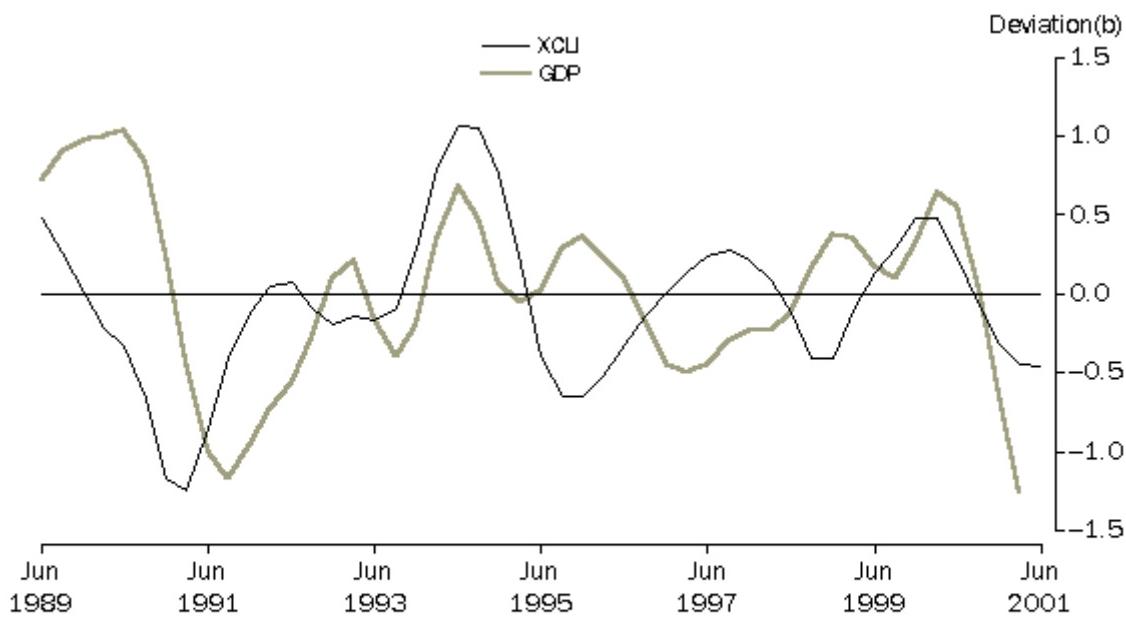
MOST RECENT MOVEMENTS

In the June quarter 2001, the XCLI declined slightly (down 0.01 to -0.45) for the fifth consecutive quarter. This confirms that the XCLI peaked in the March quarter 2000 and that based on historical performance, a peak in the GDP business cycle may have been expected to emerge several quarters later. However, the GDP business cycle also peaked in the March quarter 2000. The change in the XCLI in the June quarter 2001 (-0.01) is much smaller than that in the March quarter 2001 (-0.13).

In the June quarter 2001, the largest negative contribution to the change in the XCLI came from job vacancies (-0.14) while the largest positive contribution came from the housing finance commitments component (0.16) (see table 2).

The growth in GDP trend has been slowing from the March quarter 2000 (when it grew by 1.3%) to the March quarter 2001 (0.2%). The growth of the historical long-term trend has also slowed and was 0.8% in the March quarter 2001.

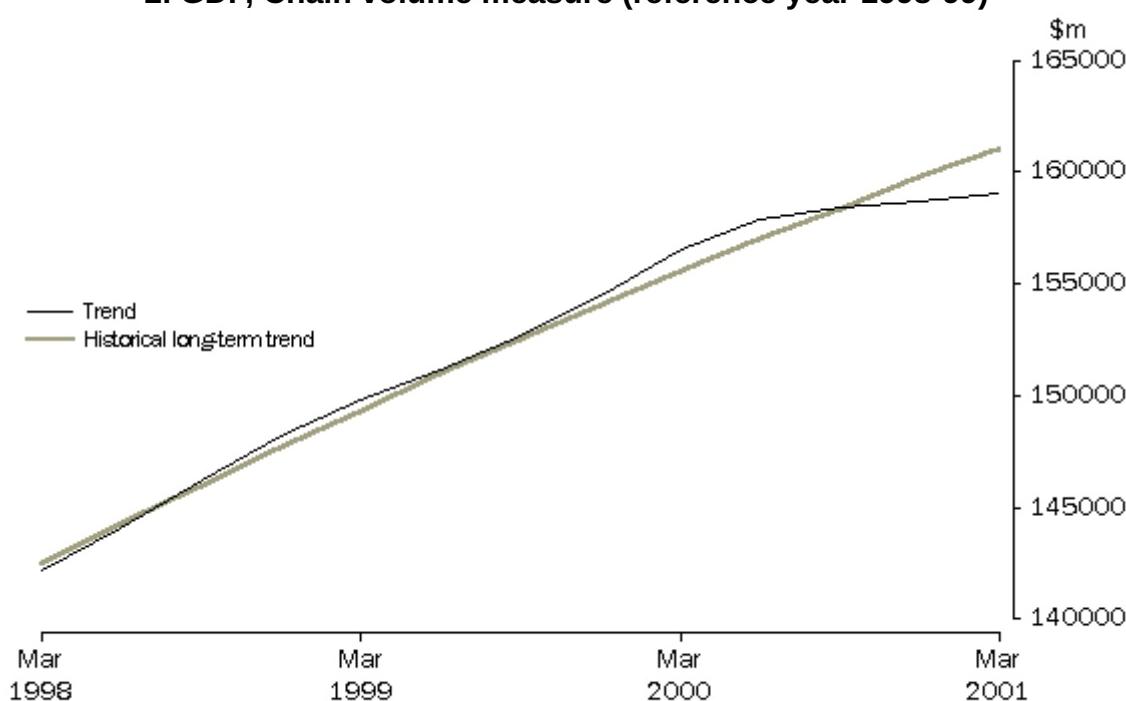
1. EXPERIMENTAL COMPOSITE LEADING INDICATOR (XCLI) AND ITS TARGET, THE BUSINESS CYCLE IN GDP-Chain volume measure (reference year 1998-99)(a)



(a) In the March quarter 2001, the historical longterm trend growth rate of GDP is 0.81% and the trend growth rate is 0.18%.

(b) Deviation is the unit of measure for the GDP series and it refers to the deviation of trend from its historical long-term trend. The XCLI series has no official unit of measure, ie it is dimensionless. (see Endnote).

2. GDP, Chain volume measure (reference year 1998-99)



Source: ABS (Cat no. 5206.0), Quarterly data

TABLE 1: XCLI and GDP, Chain volume measure (reference year 1998–99)

	Mar 2000	Jun 2000	Sep 2000	Dec 2000	Mar 2001	Jun 2001
LEVEL						
XCLI	0.48	0.23	-0.08	-0.31	-0.44	-0.45
GDP Trend (\$m)	156,511	157,844	158,431	158,745	159,032	n.a.
GDP Long-term trend (\$m)	155,505	156,960	158,366	159,746	161,046	n.a.
GDP Business cycle	0.65	0.56	0.04	-0.63	-1.25	n.a.

MOVEMENT FROM PREVIOUS QUARTER

XCLI (change)	0.00	-0.24	-0.31	-0.23	-0.13	-0.01
GDP Trend (% change)	1.29	0.85	0.37	0.20	0.18	n.a.
GDP Long-term trend (%) change)	0.96	0.94	0.90	0.87	0.81	n.a.
GDP Business cycle (change)	0.33	-0.08	-0.52	-0.67	-0.63	n.a.

TABLE 2: Contributions to quarterly changes in the XCLI

	Mar 2000	Jun 2000	Sep 2000	Dec 2000	Mar 2001	Jun 2001
Trade factor	0.03	0.00	0.01	0.02	0.05	0.09
United States GDP	0.07	0.02	-0.03	-0.06	-0.08	-0.09
Housing Finance Commitments	-0.11	-0.16	-0.13	0.03	0.13	0.16
Job Vacancies	0.03	0.02	-0.01	-0.08	-0.12	-0.14
All Industrials Index	0.06	0.01	0.02	-0.01	-0.04	-0.01
Real interest rate (inverse lagged four quarters)	-0.05	-0.06	-0.06	-0.03	0.00	0.00
Production expectations (lagged one quarter)	0.02	-0.02	-0.05	-0.06	-0.08	-0.05
Business expectations (lagged one quarter)	-0.05	-0.06	-0.06	-0.04	0.02	0.03
Total XCLI, change from previous quarter	0.00	-0.24	-0.31	-0.23	-0.13	-0.01

THE REFERENCE SERIES, GDP

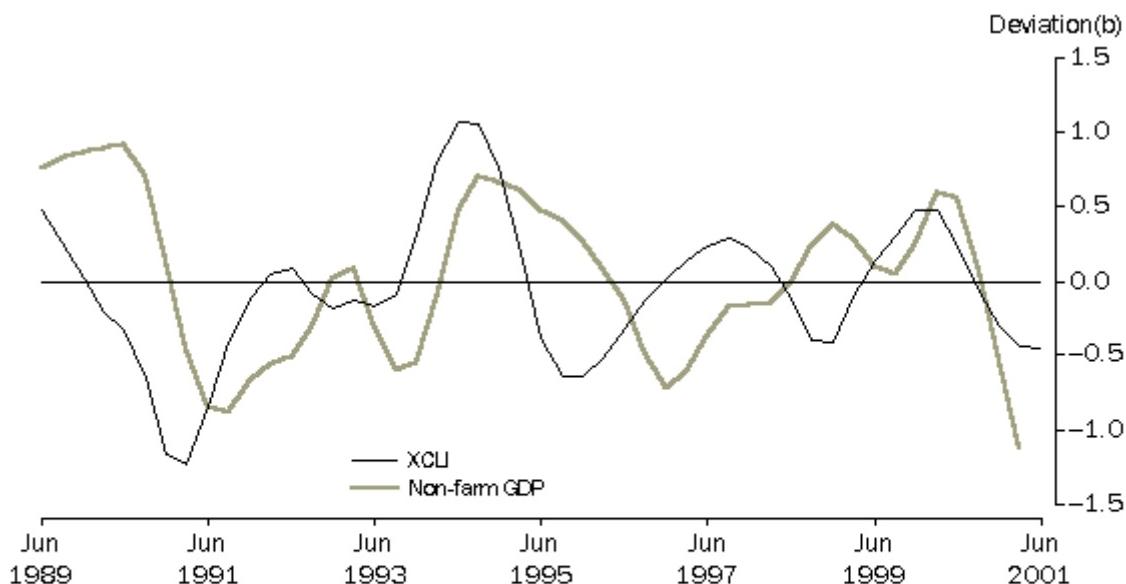
The reference or target series for the XCLI is the GDP business cycle in Australia. The business cycle of a series is defined as the deviation between the trend and the historical long-term trend in the series. Graph 1 shows the business cycles in GDP and the XCLI. Graph 2 shows the level of trend GDP compared with its historical long-term trend. When the trend is below the historical long term trend the GDP deviation from trend shown in Graph 1 is negative.

AN ALTERNATIVE REFERENCE SERIES, NON-FARM GDP

In the December quarter 1995, there was a peak in the business cycle which the XCLI failed to predict. This peak was largely attributable to the effects of a good farm season. The XCLI does not contain an indicator which leads first order farm product effects. In recognition of this, Graph 3 presents an alternative target series, namely, the business cycle of non-farm GDP, chain volume measure.

The XCLI peaked in the March quarter 2000. Based on historical performance, the non-farm GDP business cycle may have been expected to peak two quarters later. However, the non-farm GDP business cycle also peaked in the March quarter 2000.

3. EXPERIMENTAL COMPOSITE LEADING INDICATOR (XCLI) AND, THE BUSINESS CYCLE IN NON-FARM GDP- Chain volume measure (reference year 1998-99)(a)



(a) In the March quarter 2001, the historical long-term trend growth rate of non-farm GDP is 0.8% while the trend growth rate is 0.21%.

(b) Deviation is the unit of measure for the GDP series and it refers to the deviation of trend from its historical long-term trend. The XCLI series has no official unit of measure, ie it is dimensionless (see Endnote).

ANALYSIS OF COMPONENT INDICATORS

The XCLI summarises the business cycles present in a selection of economic indicators which had typically shown turning points ahead of the business cycle in GDP from the early 1970s to the early 1990s. Because the evolution of each expansion and contraction in activity presents a unique combination of features, none of the individual component indicators has had an unvarying or perfectly stable leading relationship with GDP. However, when combined to form the XCLI their performance as a group is more stable.

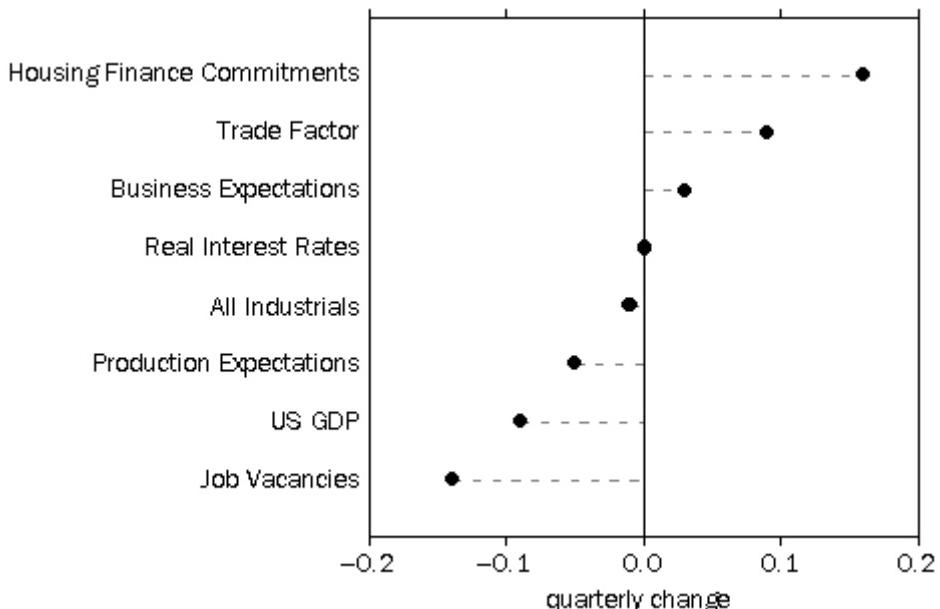
In the June quarter 2001, three of the eight components made negative contributions to the quarterly change in the XCLI, three components made a positive contribution, while two made negligible contributions (Table 2 and Graph 4). Overall, the change in the XCLI was still negative although the rate of decline was less than in the previous quarter. Graphs 5 to 12 show each component's trend and historical long-term trend.

Negative contributions. The components making significant negative contributions to the quarterly change in the June quarter 2001 XCLI were job vacancies (-0.14, Graph 8), US GDP (-0.09, Graph 6) and the production expectations (-0.05, Graph 11).

Positive contributions. The components making positive contributions to the quarterly change in the June quarter 2001 XCLI were housing finance commitments (0.16, Graph 7), trade factor (0.09, Graph 5) and business expectations (0.03, Graph 12).

The real interest rate component (0.00, Graph 10) and the All Industrials Index (-0.01, Graph 9) made negligible contributions.

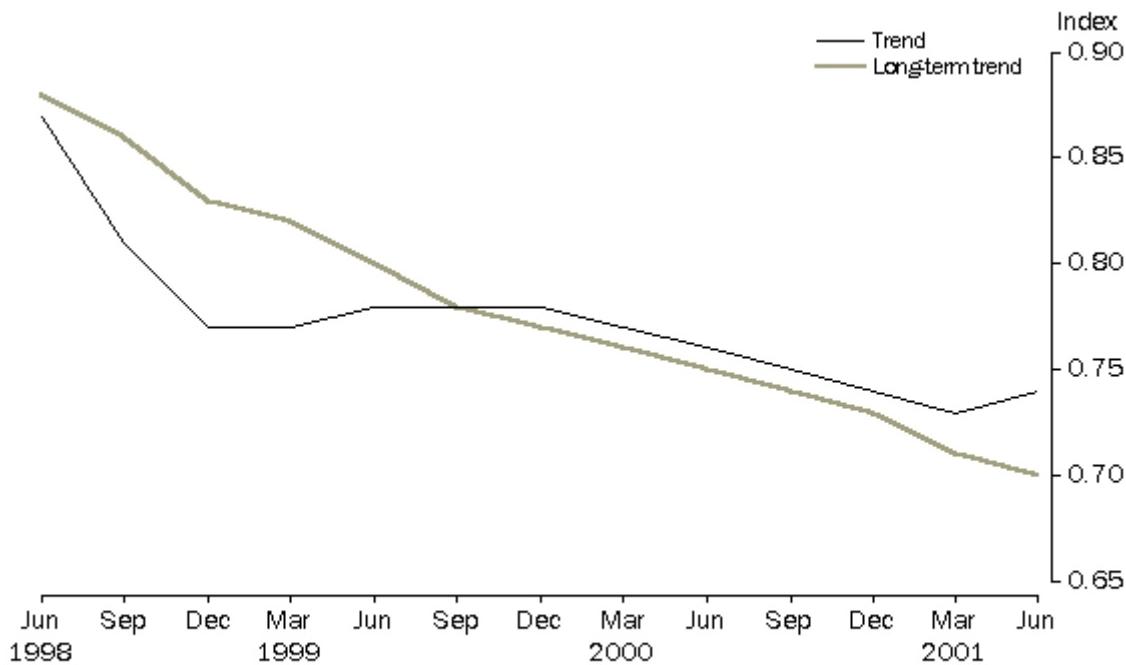
4. CONTRIBUTIONS TO QUARTERLY CHANGES IN THE XCLI



Trade factor

The trade factor is defined as the ratio between commodity prices in terms of Special Drawing Rights and the price index for imported materials used by Australian producers. This ratio gives an early indication of changes in the terms of trade. In the June quarter 2001, the trend of the trade factor showed a small rise, while the long-term trend continued to decline. Therefore, the trade factor component made a positive contribution (0.09) to the change in the XCLI in the June quarter 2001.

5. TRADE FACTOR



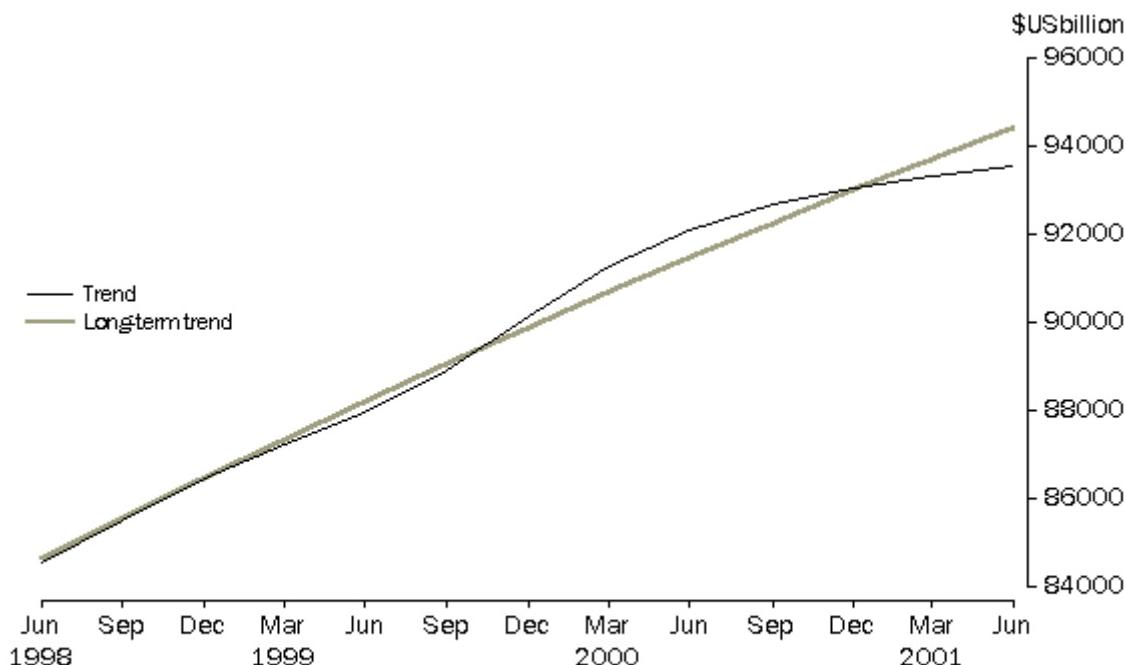
Source: ABS (Cat no. 6411.0) and RBA Bulletin.

United States GDP

In the June quarter 2001, the trend of the United States GDP continued to rise, although at a slower rate than the long-term trend. Therefore, the US GDP component made a negative

contribution (-0.09) to the change in the XCLI in the June quarter 2001. The rate of growth of the long term trend has decelerated since the June quarter 1998. The trend of the US GDP crossed below its long-term trend in the December quarter 2000, for the first time since the December quarter 1999.

6. UNITED STATES GDP, Chain volume measure (Reference year 1996)



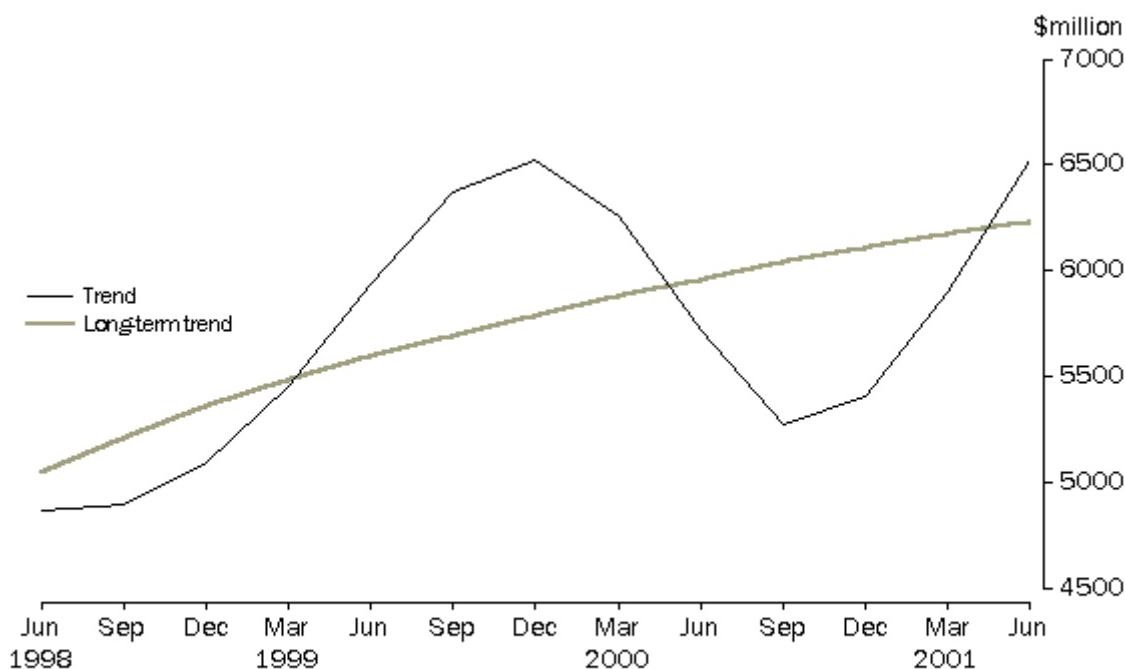
Source: US Bureau of Economic Analysis.

Secured housing finance commitments

The trend of the secured housing finance commitments continued to rise in the June quarter 2001. The historical long-term trend for secured housing finance commitments continued to rise in the December quarter 2000 although at a decelerating rate over the last three years.

Since the trend grew faster than its long-term trend in the June quarter 2001, the secured housing finance commitments component contributed positively (0.16) to the change in the XCLI in the current quarter, following positive contributions in March Quarter 2001 (0.13) and the December Quarter 2000 (0.03).

7. SECURED HOUSING FINANCE COMMITMENTS



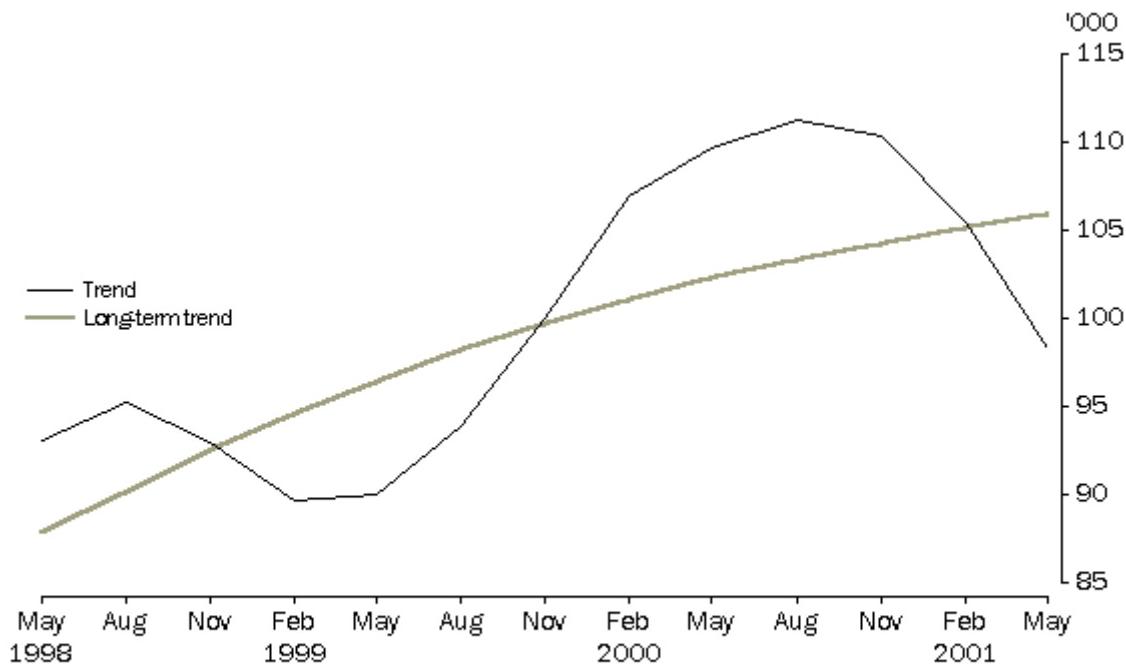
Source: ABS (Cat no. 5671.0).

Job Vacancies

Note that the job vacancies series are referenced to the middle month of a quarter.

The original job vacancies trend started to decline in November 2000, and has since continued to decline. It fell below its historical long-term trend in February 2001. In contrast, the historical long-term trend has been rising at a decelerating rate since May 1998. Job vacancies made the largest negative contribution (-0.14) to the change in the XCLI in the June quarter 2001.

8. JOB VACANCIES

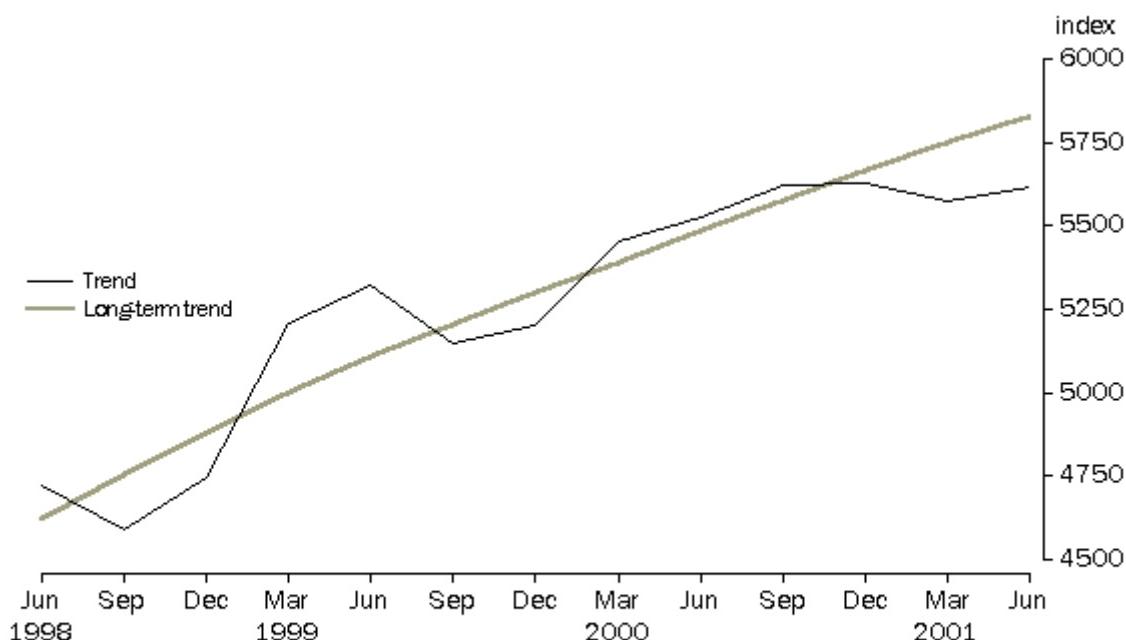


Source: ABS (Cat no. 6354.0).

All Industrials index

In the June quarter 2001, the trend of the All Industrials Index rose, but its historical long-term trend rose a little more strongly. Accordingly, in the June quarter 2001, the All Industrials Index made a negligible contribution (-0.01) to the change in the XCLI in the June quarter 2001.

9. ALL INDUSTRIALS INDEX



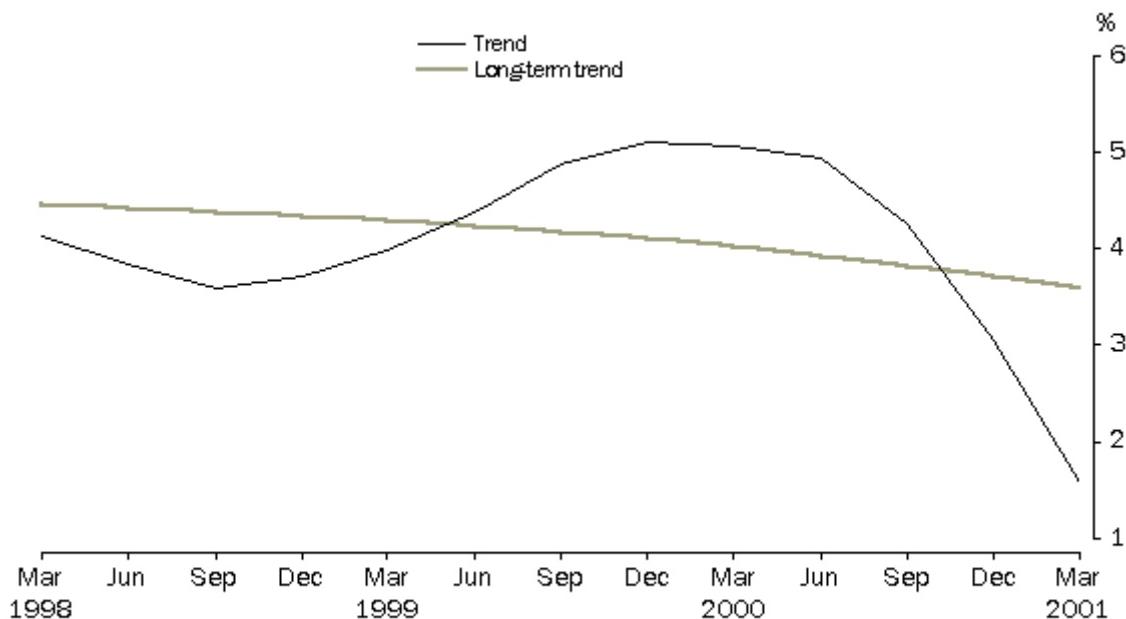
Source: Australian Stock Exchange.

Real interest rate

The XCLI uses the inverse of the business cycle in the real interest rate, lagged four quarters. Therefore, it is the June quarter 2000 movement of the real interest rate that contributes to the June quarter 2001 movement in the XCLI. Following five quarters of negative contributions to the XCLI, the real interest rate component made a negligible contribution (0.00) to the change in the XCLI in the March and June quarters 2001 but it will make a positive contribution next quarter.

The trend of the real interest rate continued to decline in the March quarter 2001 for the fifth consecutive quarter. Although the long-term trend also declined over the period, it did so at a slower rate, hence the real interest rate component should continue to make positive contributions to the change in the XCLI through the March quarter 2002. The real interest rate is defined as the difference between nominal interest rates and the change in the domestic final demand chain price index.

10. REAL INTEREST RATE



Source: ABS (Cat no. 5206.0) and Treasury.

Production and business expectations

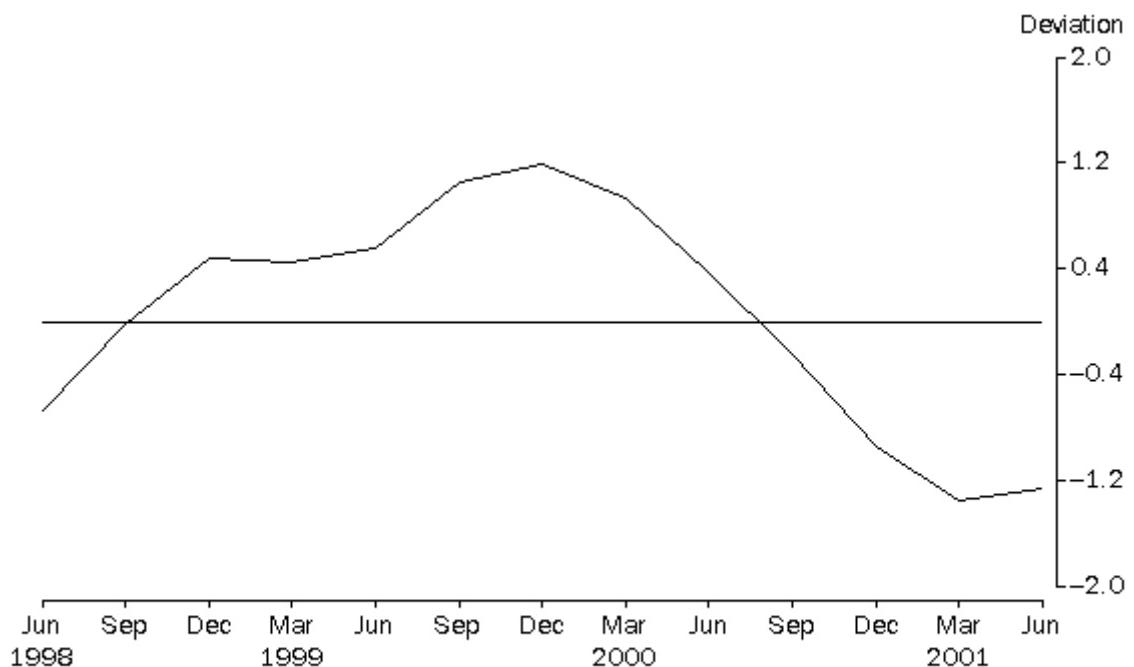
Note: These components are lagged one quarter in the compilation of the XCLI. Like other XCLI components, the production expectations and business expectations series have been smoothed and standardised to display cyclical behaviour. However, these series are not considered to exhibit long-term trend growth.

In the June quarter 2001, the trend of production expectations rose after three consecutive quarters of decline. According to the Survey of Industrial Trends (produced by ACCI and Westpac Banking Corporation), production expectations in original terms were up strongly in June quarter 2001. Because this component is lagged one quarter, the fall in the March quarter 2001 made a negative contribution (-0.05) to the change in the XCLI in the June quarter 2001 and its positive growth means it is expected to make a positive contribution for September quarter 2001.

In the June quarter 2001, the trend of business expectations rose following rises in the previous two quarters. According to the June quarter 2001 Survey of Industrial Trends there was a sharp increase in business expectations, in original terms, with a sharp increase in expected new orders and output. In the March quarter 2001, the business expectations component made a small positive contribution to the change in the XCLI.

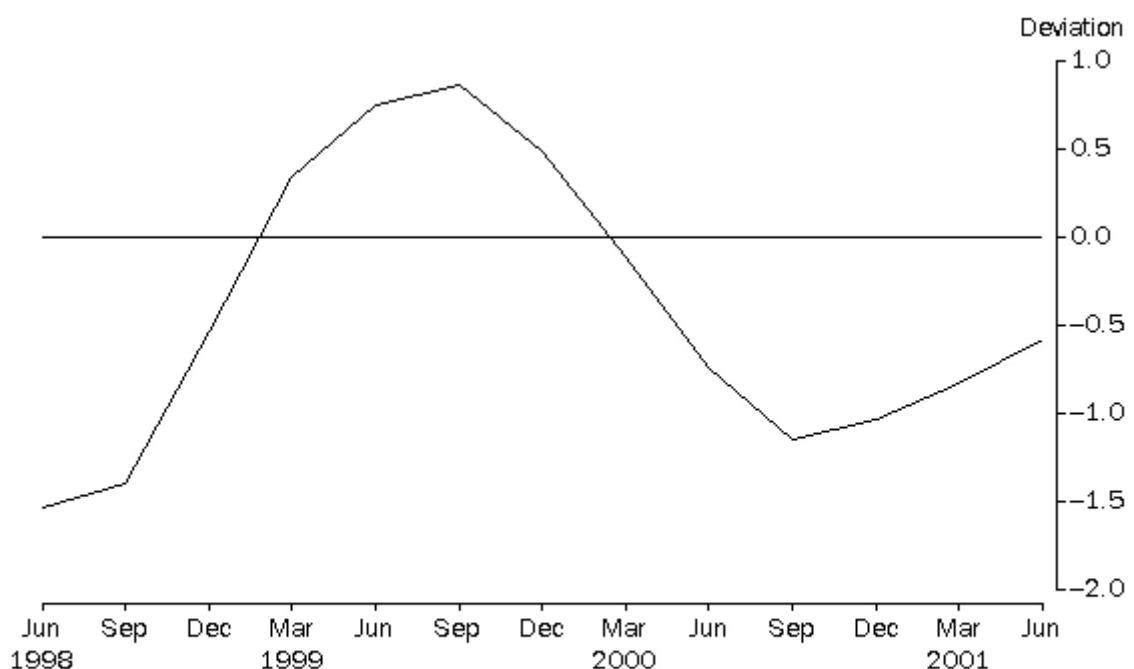
Note: The source of these expectations series is the Australian Chamber of Commerce and Industry, and Westpac Banking Corporation, Survey of Industrial Trends. The ABS also compiles business expectations data. However, the ABS data cannot yet be included as a component of the XCLI due to the insufficient length of the time series.

11. PRODUCTION EXPECTATIONS, Trend



Source: ACCI and Westpac Banking Corporation, 'Survey of Industrial Trends'.

12. BUSINESS EXPECTATIONS, Trend



Source: ACCI and Westpac Banking Corporation, 'Survey of Industrial Trends'.

LONGER TIME SERIES AND FURTHER DETAILS

Details of the compilation of the XCLI index can be found in An Experimental Composite Leading Indicator of Australian Economic Activity, (1347.0), June 1993, and in the feature articles published in Australian Economic Indicators (1350.0) in August and October 1992 and May 1993.

Longer time series of the data presented in this XCLI article are now available on AUSSSTATS. For further information about these statistics please contact Jo Jackson on Canberra (02) 6252

ENDNOTE

The unit of measurement varies between XCLI components. For example, the real interest rate is measured as a percentage, job vacancies as a number, United States GDP in dollar terms and the trade factor is measured in index number form. Each component is therefore standardised to make its contribution to the XCLI comparable.

The standardisation procedure gives each XCLI component an average value of 1. The variation of each component about its average is also standardised, so that the average deviation also equals 1. Chain volume GDP (the reference series) is also standardised in the same way.

Graphs 1 and 3 use the standardised forms of the XCLI, GDP and non-farm GDP series. The graphs show the deviation of the standardised series from their respective historical long-term trends. Because of the standardisation procedure, the deviation measure has no particular unit (i.e. it is not measured in dollars, or percentage change, or any other real world unit).

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